SECTION 08110

STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated steel doors and frames.

B. Steel frames for wood doors.

C. Fire-rated steel doors and frames.

D. Thermally insulated steel doors.

1.02 RELATED REQUIREMENTS

A. Section 08710 - Door Hardware.

B. Section 08800 - Glazing: Glass for doors and borrowed lites.

C. Section 09900 - Paints and Coatings: Field painting.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.

B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.

C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).

D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2007.

E. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames; 2006.

F. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.

G. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association; 1999.

H. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.

I. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; 1998.

J. **<u>UL Fire Resistance Directory</u>**

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with NAAMM HMMA 840.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Doors and Frames:
  1. Assa Abloy Ceco, Curries, or Fleming: www.assaabloydss.com.
  2. Windsor Republic Doors: www.republicdoor.com.
  3. Steelcraft: www.steelcraft.com.
  4. Substitutions: See Section 01600 - Product Requirements.

2.02 DOORS AND FRAMES

A. Requirements for All Doors and Frames:
  1. Accessibility: Comply with ANSI/ICC A117.1.
  2. Door Top Closures: Flush with top of faces and edges.
  3. Door Edge Profile: Beveled on both edges.
  4. Door Texture: Smooth faces.
  5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
  6. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
  7. Galvanizing for Units in Wet Areas: All components hot-dipped zinc-iron alloy-coated (galvannealed), manufacturer's standard coating thickness.
  8. Finish: Factory primed, for field finishing.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL DOORS

A. Exterior Doors:
  1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
  2. Core: Polystyrene foam.
  3. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
  4. Weatherstripping: Separate, see Section 08710.

2.04 STEEL FRAMES

A. General:
  1. Comply with the requirements of grade specified for corresponding door.
     a. ANSI A250.8 Level 3 Doors: 14 gage frames.
     b. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 1, 18 gage
  2. Finish: Factory primed, for field finishing.
  3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
  4. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

B. Exterior Door Frames: Fully welded.

1. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
2. Weatherstripping: Separate, see Section 08710.

C. Interior Door Frames, Non-Fire-Rated: Fully welded type.

D. Interior Door Frames, Fire-Rated: Fully welded type. Tested to ratings indicated on drawings in accordance UL 10C for UL Category A positive pressure fire doors.
1. Fire Rating: Same as door, labeled.
2. Hardware preparation: Modifications made to Fire-Rated frames for electric and mortised hardware shall be made by the frame manufacturer. Field modifications shall not be permitted per NFPA 80-1999.

2.05 ACCESSORY MATERIALS

A. **Glazing: As specified in Section 08800, factory installed.**

B. Astragals for Double Doors: Specified in Section 08710.
1. Fire-Rated Doors: Steel, shape as required to accomplish fire rating.

C. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.

D. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

E. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

2.06 FINISH MATERIALS

A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.

B. In addition, install fire rated units in accordance with NFPA 80-1999, manufacturer's installation instructions, and the listing requirements.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Coordinate installation of hardware.

F. Coordinate installation of glazing.

G. Coordinate installation of electrical connections to electrical hardware items.

H. Touch up damaged factory finishes.

I. For fire rated door frames, do not paint over rating labels.

3.04 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

3.06 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION